INTEGRATED CIRCUIT DIE HAVING A COPPER CONTACT AND METHOD THEREFOR

ABSTRACT

An integrated circuit die (10) has a copper contact (16, 18), which, upon exposure to the ambient air, forms a native copper oxide. An organic material is applied to the copper contact which reacts with the native copper oxide to form an organic coating (12, 14) on the copper contact in order to prevent further copper oxidation. In this manner, further processing at higher temperatures, such as those greater than 100 degrees Celsius, is not inhibited by excessive copper oxidation. For example, due to the organic coating, the high temperature of the wire bond process does not result in excessive oxidation which would prevent reliable wire bonding. Thus, the formation of the organic coating allows for a reliable and thermal resistance wire bond (32, 34). Alternatively, the organic coating can be formed over exposed copper at any time during the formation of the integrated circuit die to prevent or limit the formation of copper oxidation.